

ATTACHMENT 1

EPA Region 2 Underground Injection Control (UIC) Program Instructions for Class V Remediation/Closure Plans

- To ensure UIC Class V well remediation/closure is conducted in accordance with regulatory requirements and in a manner protective of the environment, the United States Environmental Protection Agency Region 2 (EPA) UIC Program requires that the following information be included in a Class V Remediation/Closure Plan (“Plan” or “Workplan”). As outlined in this document, please be advised that the requirements vary depending on the type of UIC structure, the type of facility, and the fluid(s) discharged to the well.
- UIC Class V Remediation/Closure Plans must be submitted to and approved by the EPA prior to initiation of **any** drain sealing, well sampling and/or clean-out activities. You will be notified in writing that EPA has approved your Plan or that the Plan requires modifications to meet the regulatory requirements. *Please Note:* State and/or local regulatory agencies may have additional regulations and requirements.
- Failure to properly implement these requirements will result in EPA considering all available enforcement options.
- All Remediation/Closure Plans and Final Reports must be submitted to EPA Region 2 for review and approval. Documents can be mailed to:

Chief
Ground Water Compliance Section
U.S. Environmental Protection Agency
290 Broadway, 20th Floor
New York, NY 10007-1866

SECTION I: GENERAL REQUIREMENTS

The following information must be included in a Remediation/Closure Plan (“Plan” or “Workplan”) for all types of Class V wells. If the item is not applicable to your site, please indicate so in the Plan.

A. Site Schematic and Well-System Diagram. The diagram must include all buildings; drinking water wells; drains (e.g., floor drains, sink drains, storm drains); piping; all storage areas for chemicals, oils, or wastes; chemical or sanitary waste processing units (e.g., oil-water separators, septic tanks, wastewater treatment systems) and final discharge points for all drainage (e.g., drywells/overflow drywells, septic tanks/leach fields, open underground pipes, retention basins, surface waters/streams, municipal sanitary/storm sewer connections).

B. Description of business. Description must include all activities conducted, or known to have been conducted, at the facility and a listing of chemicals and wastes used, generated, disposed of and/or stored at the facility. In addition, include the Standard Industry Code (SIC) for the current use or, if vacant, the immediate prior use.

C. Description of all fluids injected. Description must include fluids which enter, may enter or may have entered the injection well(s); or are suspected or known to have been used at the facility. Include any recent analytical results for pertinent wastewater, sludge and/or soil sampling.

The Workplan for a large capacity cesspool that has received only sanitary waste must include supporting information to affirm the sanitary only discharge (i.e. facility either does not use, generate or store chemicals or chemical wastes; or no drains of any kind are located near chemicals/chemical wastes are delivered, used, stored or generated).

D. Verification of connection between drain and UIC well. Connection between all drains and the injection well(s) must be verified by an independent third party and/or witnessed by an EPA inspector. A statement must be included indicating who will be performing the verification and what verification method will be used.

E. Description of permanent closure. If applicable, include a description of the plug emplacements or how the drain(s) and/or well(s) will be permanently closed.

As of April 5, 2005, large capacity cesspools were banned and must be permanently closed or upgraded to septic systems by installing a septic tanks. As of January 1, 2008, all motor vehicle waste disposal wells must be permanently closed unless permitted.

F. Contaminant removal: Describe the procedures to be used to pump, excavate, or otherwise remove all contaminated liquid, sludge and soil from within, beneath and around the injection well until: (1) visibly clean soil is reached; or (2) structural integrity of the excavation or buildings/structures near the excavation, may be compromised, or (3) ground water is encountered in sufficient quantities to preclude additional excavation. If a point of compromised structural integrity is reached or ground water flow precludes removal of all contamination, soil borings or other remedial methods may be required to delineate the extent of any remaining contamination within, beneath or around the injection well. If there is a treatment tank (e.g., oil-water separator, septic tank) or associated piping in the drainage system discharging to the injection well(s), the contents of the tank(s) and piping must be cleaned out and disposed of properly. Any cleaning of tank(s) or piping must be done in a manner that does not release contaminants into the environment. The Workplan must describe the procedures to be used.

Please note, excavation of soil is typically not required for large capacity cesspools that have received only sanitary waste. However, the contents of the sanitary only cesspool must be pumped out and disposed of properly by a licensed hauler.

G. On-site storage of excavated material: Include a description of on-site storage for excavated material to be used while awaiting proper disposal of all wastes (soil, gravel, sludge, liquids or other materials) removed from the Class V well system (i.e., drain, treatment tank and injection well).

The waste storage methodology utilized must ensure that contaminants are not released back into the environment during the period of storage. Dry soils and other dry wastes may be stored on, and covered by, heavy gauge plastic or stored in roll-off containers designed for such a use. Liquid wastes must be stored in covered drums, tanks or roll-off containers designed to contain such wastes.

H. Waste characterization: All excavated material (soil, gravel, sludge, liquid or other materials) must be characterized for disposal purposes and disposed of or otherwise managed, in accordance with all applicable Federal, State, and local requirements. The Workplan must describe the procedures to be used.

I. Minimum sampling and analytical requirements: Specific sampling and analytical requirements are dependent on the type well structure and type of facility at which the well is being remediated. See Sections II and III for the minimum well sampling and analytical requirements.

Samples should be collected in a manner consistent with the sampling procedures outlined in EPA's compendium of analytical and sampling methods titled "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", also known as SW-846 (see <http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm>). Workplans must outline sampling collection procedures that will be followed to ensure integrity of the sample during collection, transport and analysis.

Samples must be analyzed by a certified laboratory for all contaminants that could have entered into the groundwater as a result of the owner/operator's activities. The laboratory's Practical Quantitation Limit (PQL) achieved for all initial and/or endpoint samples must be at or below the corresponding Region 2 UIC Clean-up Objectives (see Table 1). If the PQL for any analyte is not at or below the corresponding clean-up objective, a detailed explanation must be included as to why the PQL was not, and/or cannot, be at or below the corresponding soil cleanup objective.

J. Backfill: Clean inert soil or sand shall be used as backfill.

K. Final Report: A Final Remediation/Closure Report must be completed within 30 days of completion of remediation/closure and must include at a minimum: remediation procedures used; the name, address and telephone number of all entities that supplied backfill material; a summary table comparing the analytical results to Region 2 UIC Cleanup Objectives (see Table 1) by sample and identifying any exceedances; full laboratory report for all analytical results (including quality control analyses, sample dilution if any, clear identification of sample location and depth, chain of custody and detection levels achieved); and waste disposal manifests.

SECTION II: WELL SPECIFIC SAMPLING REQUIREMENTS

A. Drywells, Leach Pits, Cesspools, Open Pipes, Floor Drains discharging directly into the ground, and Similar Structures.

The following information must be included in a Workplan for a drywell, leach pit, cesspool, open pipe, or floor drain discharging directly into the ground.

1.) Large capacity cesspools that have received only sanitary waste.

“Large capacity” means serves or designed to serve 20 or more people per day. The cesspool must be pumped out and the wastes must be disposed of properly by a licensed hauler. Excavation, end-point sampling and analysis are typically not required.

2.) Drywells, cesspools, open pipes, or floor drains that have received industrial contaminants (directly or through a septic tank).

Endpoint soil samples must be collected after all contaminated liquids, sludges and soils have been removed from in, around and below the well at a depth of 6 inches to 1 foot below the base of the excavation. (If no apparent contamination is present in the injection well, a sample may be collected from a depth of 6 inches to 1 foot below the bottom of the injection well). If ground water is encountered during the remediation, a representative ground water sample shall be collect.

Endpoint samples must be analyzed for the constituents listed in Section III based on facility type and must include all contaminants that could enter into the groundwater as a result of the owner/operator’s activities.

B. Drainfields, Tile fields, Leachfields and Similar Subsurface Fluid Distribution Structures

The following information must be included in a Workplan for a drainfield, tile field, leachfield, or other subsurface fluid distribution system that has or may have received industrial waste.

1.) Pre-excavation sampling. Due to the expense of excavation of a subsurface fluid distribution structure, EPA Region 2 allows pre-excavation sampling to determine if excavation of the injection well is necessary. Pre-excavation samples must be analyzed for the constituents listed in Section III based on facility type in addition to any contaminants that could enter groundwater as a result of the owner’s or operator’s activities. The pre-excavation sample results shall be tabulated. The full laboratory analytical report and the summary table shall be submitted to EPA for review. EPA will advise you of any additional sampling and/or remediation that may be necessary. Pre-excavation sampling must be performed as follows:

a.) Industrial waste discharges to a septic system which then discharges to a drainfield, tile field, leach field or similar structure (i.e. all waste passes through the septic tank).

i.) If the septic tank has not been pumped out in the last 12 months, collect 1 liquid sample and 1 sludge sample from within the septic tank.

ii.) If the septic tank has been pumped out within the last 12 months, collect 1 soil sample from the center of the drainfield at a depth of 1 foot below the burial depth of the laterals.

b.) Industrial waste discharges directly to a drainfield, tile field, leachfield or similar structure (i.e. all waste by-passes septic tank).

i.) Collect 1 soil sample from the center of the drainfield at a depth of 1 foot below the burial depth of the laterals.

c.) Industrial waste discharges to a septic system which then discharges to a drainfield, tile field, leach field or similar structure AND industrial wastes discharges directly to a drainfield, tile field, leach field or similar structure (i.e. some waste passes through septic tank, some waste by-passes septic tank).

i.) If the septic tank has not been pumped out in the last 12 months, collect 1 liquid sample and 1 sludge sample from within the septic tank, AND

ii.) Collect 1 soil sample from the center of the drainfield at a depth of 1 foot below the burial depth of the laterals.

2.) Post-Excavation Sampling. If excavation is required, a soil sample must be collected from a depth of between 6 inches to 1 foot below the base of the excavation and analyzed for the constituents listed in Section III based on facility type and must include all contaminants that could enter into the groundwater as a result of the owner/operators activities. If ground water is encountered during the remediation, a representative ground water sample must be collected. EPA recommends that the excavation not be backfilled until EPA has reviewed the Final Report and has notified the facility in writing that no additional remediation is necessary. If immediate backfilling is necessary, e.g. the excavation disrupts business or endangers the public, the excavation may be backfilled. However, removal of the backfill may be necessary if additional remediation is required.

SECTION III: ANALYTICAL REQUIREMENTS

Samples must be collected in accordance with the collection procedures outlined in SW-846 and analyzed by a certified lab in accordance with EPA approved methods for the constituents listed in the following table and must include all contaminants that could enter into the groundwater as a result of the owner/operator's activities. Other EPA-approved analytical methods may be substituted with prior written approval of EPA. Please note, composite samples are not allowed for volatile organic compound sampling.

a) Motor Vehicle Waste Disposal Wells:

Compound	Analytical Method	
	Soil/Wastewater/Sludge	Ground Water
Volatile Organic Compounds (VOCs)	EPA Method 8260B	EPA Method 524.2 Rev 4.1
Semi-volatile organic compounds	EPA Method 8270D	EPA Method 525.2 Rev 2.0
Arsenic, cadmium, chromium, and lead	EPA Method 200.7 Rev. 4.4	EPA Method 200.7 or 200.8 Rev 5.4

b) Funeral Home Waste Disposal Wells:

Compound	Analytical Method	
	Soil/Wastewater/Sludge	Ground Water
Volatile Organic Compounds (VOCs)	EPA Method 8260B	EPA Method 524.2
Phenol, 2-methylphenol and 4-methylphenol	EPA Method 8270C or 8041A	EPA Method 8270C or 8041A
Formaldehyde	EPA Method 8315A	EPA Method 8315
Arsenic, cadmium, chromium, copper, lead and mercury	EPA Method 200.7 Rev. 4.4	EPA Method 200.7 Rev. 4.4 or 200.8 Rev. 5.4

c) Dry Cleaner Waste Disposal Wells:

Compound	Analytical Method	
	Soil/Wastewater/Sludge	Ground Water
Volatile Organic Compounds (VOCs)	EPA Method 8260B	EPA Method 524.2
Semi-volatile organic compounds	EPA Method 8270C	EPA Method 525.2

d) Other Industrial Waste Disposal Wells:

Compound	Analytical Method	
	Soil/Wastewater/Sludge	Ground Water
Volatile Organic Compounds (VOCs)	EPA Method 8260B	EPA Method 524.2
Semi-volatile organic compounds	EPA Method 8270C	EPA Method 525.2
Any other site specific contaminants of concern		